E1000

COVER SHEET (PAGE 1 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Proposal Title: Centralized Coded-Wire-Tag Data Management Laboratory

Applicant Name: Melodie Palmer-Zwahlen, DFG-Ocean Salmon Project

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Amount of funding requested: $ 420,393 for 3 years

Indicate the Topic for which you are applying (check only one box). Note that this is an important decision: see page __ of the Proposal Solicitation Package for more information.

- ☐ Fish Passage Assessment
- ☐ Fish Passage Improvements
- ☐ Floodplain and Habitat Restoration
- ☐ Gravel Restoration
- ☑ Fish Harvest
- ☐ Species Life History Studies
- ☐ Watershed Planning/Implementation
- ☐ Education
- ☐ Fish Screen Evaluations - Alternatives and Biological Priorities

Indicate the geographic area of your proposal (check only one box):

- ☐ Sacramento River Mainstem
- ☐ Sacramento Tributary: _____
- ☑ Delta
- ☐ East Side Delta Tributary: _____
- ☐ Suisun Marsh and Bay
- ☐ San Joaquin Tributary: _____
- ☐ San Joaquin River Mainstem
- ☐ Other: _____
- ☐ Landscape (entire Bay-Delta watershed)
- ☐ North Bay: _____

Indicate the primary species which the proposal addresses (check no more than two boxes):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☑ Winter-run chinook salmon
- ☑ Spring-run chinook salmon
- ☐ Late-fall run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Delta smelt
- ☐ Longfin smelt
- ☐ Splittail
- ☐ Steelhead trout
- ☐ Green sturgeon
- ☐ Striped bass
- ☐ Migratory birds

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Indicate the type of applicant (check only one box):

- [X] State agency
- [ ] Federal agency
- [ ] Public/Non-profit joint venture
- [ ] Non-profit
- [ ] Local government/district
- [ ] Private party
- [ ] University
- [ ] Other: _____

Indicate the type of project (check only one box):

- [ ] Planning
- [ ] Implementation
- [X] Monitoring
- [ ] Education
- [ ] Research

By signing below, the applicant declares the following:

(1) the truthfulness of all representations in their proposal;

(2) the individual signing the form is entitled to submit the application on behalf of the applicant (if applicant is an entity or organization); and

(3) the person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section II.K) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Scott Bauer for Melodie Palma-Zwahlen

(Signature of Applicant)

Executive Summary

Centralized Coded-Wire-Tag Data Management Laboratory
Melodie Palmer-Zwahlen, Associate Marine Biologist

A centralized CWT lab with permanent lab staff is needed to reduce the impact of increased tagging by CV hatcheries. It will standardize and reduce the training time needed by today's multiple CWT labs and lead to a consistent statewide procedure for processing heads and creating databases. Increasing numbers of salmon are code-wire-tagged today. Fish managers require real-time CWT data from freshwater and ocean fisheries, giving them the ability to make in-season management changes as needed. CWT data are used by the various government, public and private agencies and individuals each year to manage salmon fisheries in Alaska, Canada, Washington, Idaho, Oregon and California. A consistent statewide procedure for processing heads and creating databases is needed to standardize numerous and different methods.

Efforts are underway by the Comprehensive Assessment and Monitoring Program (CAMP) of the Central Valley Project Improvement Act (CVPIA) to increase tagging levels at Central Valley (CV) State and Federal hatcheries to 25-30 percent of hatchery production. Most CV hatcheries currently tag 8-10 percent of their production. A CAMP contract currently being negotiated with Northwest Marine Technology calls for an additional 5 million hatchery salmon to be tagged in the CV during fall 1999. In addition, CAMP is recommending expanded monitoring programs throughout the CV. If this occurs, fishery monitoring groups will be significantly impacted in their ability to monitor, collect, and process CWT samples in a timely manner.

Currently, several Inland Fisheries Division (IFD) projects and non-Department groups also process their own CWTs utilizing their own methods. Processing all the heads collected in California (including U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Department of Forestry (CDF), Department of Water Resources (DWR), and other non-Department programs) at one centralized facility would ensure the proper processing and reporting of all CWTs.

The California Department of Fish and Game's (DFG) Ocean Salmon Project (OSP) has been processing all coded-wire-tagged (CWT) salmonid collected during the statewide monitoring of California's commercial and recreational ocean salmon fisheries for the last 20 years. In addition, OSP processes the majority of CWT heads (~4000 heads) collected in the Central Valley (CV) by other Department projects, hatcheries, and other entities; however, there are many groups (both private and public) that process CWTs retrieved by their respective projects.

Approximately 95 percent of the CWTs recovered by the OSP are from CV hatcheries. The remaining 5 percent comes from the Klamath Basin, California coastal rivers, wild and out-of-state stocks. Prior to 1997, OSP processed 2,000 to 5,000 CWTs per season. In 1994, only 2 percent or 5,300 salmon sampled by OSP in the ocean fisheries were tagged. In 1997, more than 5 percent or 10,300 salmon sampled were tagged.

Centralized Coded-Wire-Tag Data Management Laboratory

California Department of Fish and Game - Ocean Salmon Project
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I-010417

PROJECT DESCRIPTION

Project Description and Approach

This project would provide a fully equipped, fully staffed, year-round CWT laboratory that could process 60,000+ salmonid CWTs (other species could be included) annually on a timely basis. All CWTs collected in California ocean and inland waters would be collected, processed, and verified by permanent laboratory staff via an established, cost-efficient protocol. All databases would be created in-house and reported to the PSMFC in the proper format.

The OSP is currently responsible for processing all salmonid CWTs collected during the statewide monitoring of California's commercial and recreational ocean salmon fisheries. In addition, OSP processes the majority of CWT heads (~4000 heads) collected in the CV by other Department projects, hatcheries, and other entities; however, there are many groups (both private and public) that process CWTs retrieved by their respective projects. Since California does not have a standard protocol for collecting or processing CWTs, a wide variety of methods are currently used. In addition, pertinent information is often missing when these data are reported to OSP, the project who is currently responsible for creating and submitting California's annual salmonid CWT databases (both ocean and inland) to the PSMFC in the proper format.

Currently, efforts are underway by CAMP of the CVPIA to increase tagging levels at CV State and Federal hatcheries to 25-30 percent of hatchery production. Most CV hatcheries currently tag 8-10 percent of their production.

Propose Scope of Work:

1. Augment the existing OSP CWT laboratory with two permanent full-time lab assistants, two PYs of temp help (scientific aide), and additional equipment. All lab staff would be supervised by OSP laboratory lead associates. The OSP CWT lab is currently in Healdsburg; however, under the current Marine Region restructuring scheme, the project will be relocated to the Bodega Bay area.

2. Laboratory staff would provide training to all other projects statewide on the proper procedure for removing the head from CWT salmon and recording all pertinent information.

3. Laboratory temp help would pick up and transport CWT heads from all field sites (i.e., hatcheries, sampling ports, inriver projects) to the laboratory. Heads would be stored on-site in a secure freezer.

Propose Scope of Work (cont.):

4. Heads would be processed as quickly as possible. Lab staff would dissect each head utilizing a cylinder metal detector to retrieve the microscopic (<1mm) CWT that is embedded in the soft tissue of the snout. Each CWT will be read independently by two laboratory staff - if their "reads" disagree, an OSP biologist will read and verify the tag code.

5. Staff will then enter the six- and ten-digit codes into the California ocean or inland CWT database (data entry is conducted twice and databases compared to ensure proper data entry). The CWT databases will be compared to PSMFC master CWT release file by OSP biologists to ensure that all codes are valid. An additional check will be made for all codes of endangered or threatened species. All CWTs with these codes are read an additional time to be 100% certain that the CWT is indeed from a threatened or endangered salmon stock. After final review, CWTs will be merged by OSP biologist into databases that includes all pertinent fishery and project data in the proper PSMFC format.

6. The ocean CWT database will be submitted by OSP staff to CALFED AND PFMC, along with bimonthly catch and effort estimates by major catch area, within two weeks of each bimonthly period to allow inseason management adjustments. The inland CWT database will be submitted monthly to the PSMFC until completed; however, turnaround to individual projects and hatcheries should be within 2-3 weeks of receiving their heads (depends on completeness of data submitted with heads to the lab)

7. Laboratory staff will track down the origin of "new codes" that are for some reason missing from the master CWT release file (approximately 20 codes/year). This information will be submitted to California's CWT coordinator to ensure that the new codes are added to the master file.

8. Laboratory staff will also verify all California CWTs collected by monitoring programs in other states.

9. The ocean salmon "public informational courtesy packet" will be expanded to include inland recoveries of CWTs by sport anglers.

Location and/or Geographic Boundaries of the Project

Chinook salmon are found in virtually all 14 ecological zones that comprise the CALFED Ecosystem Restoration Projects and Programs (ERPP) Study Area. This project would process all salmonid CWTs collected in the state. CWTs collected outside the study area will be used to determine to what extent, if any, CV salmon stocks stray outside the system. Distant ocean fisheries will continue to be monitored along the California coast from Santa Barbara to the California-Oregon border.

The laboratory would remain on-site with the OSP. The current lab in Healdsburg could handle the augmentation with few modifications. If moved to Bodega Bay, adequate space for the CWT lab and freezer would be a priority in finding a new office.

Expected Benefits

Real time processing of ocean CWTs would provide the CALFED, PFMC, and other agencies with mixed stock assessment on a timely basis (1-2 week turnaround). When combined with OSP's bimonthly catch and effort information, CALFED and PFMC would be able to make in-season management decisions as needed. Areas contacting stocks of special concern could be closed quickly. This would help the CALFED and PFMC monitor salmonid migration through the Delta and decrease the effects of commercial and recreational harvest on sensitive stocks while maintaining the important ocean and river fisheries. If CV wild stocks were tagged, fishery managers could also use real-time CWT data to refine estimates of harvest impacts on wild salmon stocks. Differences detected between pre-season predictions and actual ocean landings could also allow in-river salmon allotments to be fine-tuned.

Real time processing of inland CWTs would help the ERPP attain it's goal of rebuilding chinook populations to a healthy state through the improved management and operation of the five salmon hatcheries in the Central Valley. All inland projects collecting CWTs would be trained by OSP staff on the proper procedure for removing the head from tagged salmon, recording all pertinent information, and storing correctly until picked up by laboratory staff. Thus better information will be available on the distribution, migration patterns, growth rates, etc. of CV salmon stocks.

A state CWT processing and data management lab could process 60,000-80,000 salmonid CWTs (other species could be included) annually, thus reducing the impact of increased tagging rates by CV hatcheries and other projects. Processing all the heads collected in California (including USFWS, NMFS, CDF, and DWR) at one centralized facility would ensure the proper processing and reporting of CWTs. Data quality will be greatly enhanced by working together with all projects that collect CWTs in California to ensure proper head collection and data recording.

Background and Ecological/Biological/Technical Justification

The OSP is currently responsible for processing all salmonid CWTs collected during the statewide monitoring of California's commercial and recreational ocean salmon fisheries. In addition, OSP processes the majority of CWT heads (~4000 heads) collected in the CV by other Department projects, hatcheries, and other entities; however, there are many groups (both private and public) that process CWTs retrieved by their respective projects. In 1997, an estimated 35,000 salmonid CWTs were collected in California:

12,000	Ocean Fisheries CWTs	CDFG Ocean Salmon Project
3,000	Central Valley CWTs	CDFG Ocean Salmon Project
10,000	Central Valley CWTs	USFWS Coleman Hatchery/Red Bluff (work contracted out)
5,500	Central Valley CWTs	USFWS Bay - Delta (primarily juveniles)
3,000	Klamath/Trinity CWTs	CDFG Inland Fisheries
2,000	misc. stocks CWTs	Misc. Projects (e.g., EBMUD, CCSE, MBSTP)

Since California does not have a standard protocol for collecting or processing CWTs, a wide variety of methods are currently used. In addition, pertinent information is often missing when inland data are reported to OSP, which is currently the project responsible for creating and submitting California's annual salmonid CWT databases (both ocean and inland) to the PSMFC.

Currently, efforts are underway by the CAMP of the Central Valley Project Improvement Act to increase tagging levels at CV state and federal hatcheries to 25-30 percent of hatchery production. Most CV hatcheries currently tag 8-10 percent of their production. A CAMP contract currently being negotiated with Northwest Marine Technology calls for an additional 5 million hatchery salmon to be tagged in the CV during fall 1999. In addition, CAMP is recommending expanded monitoring programs throughout the CV. If this occurs, all fishery monitoring groups will be significantly impacted in their ability to monitor, collect, and process CWT samples in a timely manner (e.g., if the ocean salmon project sees only 1% of these tags during the monitoring of the ocean fisheries in 2003, it will be an additional 50,000 CWTs to process).

Approximately 95 percent of the CWTs recovered by the Ocean Salmon Project (OSP) are from CV hatcheries. The remaining 5 percent comes from the Klamath Basin, California coastal rivers, wild and out-of-state stocks. Prior to 1997, OSP processed 2,000 to 5,000 CWTs per season. In 1994, only 2 percent or 5,300 salmon sampled by OSP in the ocean fisheries were tagged. In 1997, more than 5 percent or 10,300 salmon sampled were tagged. In addition, the number of inland CWTs submitted for processing has also increased during the last two years.

Background and Ecological/Biological/Technical Justification (cont.)

The OSP CWT lab can process ~15,000 CWTs a year. In addition, most processing occurs between October and February due to OSP staffing and budget constraints during the ocean salmon season (generally March to October). Thus there is considerable lag time from the time CWTs are collected in the field to when they are processed. Generally, the ocean CWT database is completed in December and the inland CWT database completed the following April.

If tagging of CV stocks are increased and the status quo continues, OSP will be unable to process all ocean CWTs by the end of the year. Thus, CWT data needed by PFMC to evaluate the previous season and determine management measures for the upcoming season will not be available in a timely manner. In addition, since more heads will be observed and collected in the field, OSP sampling levels will have to be reduced below the current 20% level to remain within the project's temp help budget. The project's 1997-98 temp help budget was greatly reduced by head processing costs and we are still unsure if OSP will have sufficient monies to monitor the ocean fisheries through all of June 1998. Inland CWTs will be processed as time and monies permit.

Budget Costs

Cost of CWT labs	1st yr	2nd yr	3rd yr
lab asst (2)	$40,000	$40,000	$40,000
scientific aides (2)	$34,638	$34,638	$34,638
total	$74,638	$74,638	$74,638
personnel	$12,840	$12,840	$12,840
burden	$2,650	$2,650	$2,650
total personnel	$90,128	$90,128	$90,128
detectors	$24,000		
scopes	$6,000		
freezer unit	$15,000		
facility equipment	$15,000		
computers	$6,000		
truck	$20,000		
headtags	$5,000		
misc	$5,000	$5,000	$5,000
total equipment	$72,000	$5,000	$5,000
	$162,128	$95,128	$95,128
Administration	$31,291	$18,360	$18,360
Total cost	$193,418	$113,487	$113,487
			Total
			$420,393

Applicant Qualifications

All laboratory procedures and staff will be supervised by OSP staff. The OSP has been processing CWTs for the last 20+ years. Current staff have more than 16 years combined experience with the collection, processing, and reporting of salmonid CWTs in California. This experience includes supervising laboratory staff, quality control of data, and complete database management. The current staff is already responsible for creating both ocean and inland CWT databases in the proper PSMFC format.

Agreement No. _____

Exhibit _____

STANDARD CLAUSES -
INTERAGENCY AGREEMENTS

Audit Clause. For contracts in excess of $10,000, the contracting parties shall be subject to the examination and audit of the State Auditor for a period of three years after final payment under the contract. (Government Code Section 8546.7).

Availability of Funds. Work to be performed under this contract is subject to availability of Category III funds through the State's normal budget process.

Interagency Payment Clause. For services provided under this agreement, charges will be computed in accordance with State Administrative Manual Section 8752.

Termination Clause. Either State agency may terminate this contract upon 30 days advance written notice. The State agency providing the services shall be reimbursed for all reasonable expenses incurred up to the date of termination.